

2003/0231141 ("Alden et al."). Finally, the Examiner identified allowable subject matter in claims 28, 29, 32, 36, 37, and 40, and objected to these claims as being dependent on rejected base claims. Applicants respectfully traverse all pending rejections and request reconsideration of the application.

Rejection Under 35 U.S.C. § 112, ¶ 1

The Examiner rejected independent claim 48 under Section 112(1) because, allegedly, the claimed "computer readable medium storing instructions for execution on at least one electronic computer, the instructions comprising portions of software code capable of implementing a method for estimating a field received from at least one source of electromagnetic field" contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the art that the inventors had possession of the invention. Applicants respectfully disagree.

Applicants' specification expressly discloses that "[t]he required computing functions are usually performed by a **locating server LS** connected to the network" (Specification at page 10, lines 12-14) and "at least part of the locating function can also be performed by the same mobile terminal TM, which for this purpose exploits the **processing unit 10 normally present in a mobile telephone (with a respective memory 12 associated thereto)**" (Specification at page 10, lines 18-22).

One of ordinary skill in the art would readily recognize that the disclosed "locating server" can be a type of electronic computer that executes software code stored in a computer readable medium, such as in a memory. Indeed, the conventional definition of "server" according to *The American Heritage College Dictionary* (3rd ed. 1997) is "a computer or program that controls a central repository of data that can be

downloaded and manipulated in some manner by a client.” Further, Applicants’ specification alternatively discloses a “memory 12” (i.e., a type of computer readable medium) in which software code can be stored for execution by the disclosed “processing unit 10 normally present in a mobile telephone.”

To the extent that the Examiner requires the claim language to be exactly replicated within the specification in order to satisfy the written description requirement under 35 U.S.C. § 112, ¶ 1, it is well established that claimed subject matter need not be described verbatim in the specification. See, e.g., *Cordis Corp. v. Medtronic AVE, Inc.*, 339 F.3d 1352, 1364 (Fed. Cir. 2003). While the novel aspects of the invention must be disclosed, known details, such as the disclosed “locating server” comprising a computer readable memory, need not be included in the specification. See, e.g., *Hyatt v. Boone*, 146 F.3d 1348, 1353 (Fed. Cir. 1998); *Crown Operations Intern. v. Solutia, Inc.*, 289 F.3d 1367, 1380 (Fed. Cir. 1989).

For at least the foregoing reasons, Applicants submit that the written description properly supports the claimed “computer readable medium” and the rejection under 35 U.S.C. § 112, ¶ 1 should be removed.

Rejections Under 35 U.S.C. § 103(a)

Applicants respectfully traverse the Section 103(a) rejections of claims 25-27, 30, 31, 33-35, 38, 39, and 41-48. To establish a *prima facie* case of obviousness, “All Claim Limitations Must Be Considered.” M.P.E.P. § 2143.03 (8th ed., rev. 6, Sept. 2007). More specifically, the M.P.E.P. requires that “[a]ll words in a claim must be considered in judging the patentability of that claim against the prior art.” *Id.* (quoting *In re Wilson*, 424 F.2d 1382, 1385 (CCPA 1970)). Applicants submit that a *prima facie*

case of obviousness has not been established for at least the reason that the cited art, whether taken alone or in combination, fails to teach or suggest every element recited in Applicants' independent claims 25, 33, 41, 44, and 48.

Independent method claim 25 calls for a combination including, for example, "defining a propagation model for estimating the field received from the at least one source of electromagnetic field at a determined position of a territory," "modifying the propagation model according to topology characteristics of the at least one source of electromagnetic field," and "using the modified propagation model to estimate the field received from the at least one source of electromagnetic field at the determined position of the territory." Applicants submit that the art of record fails to disclose or suggest at least the defining, modifying, and using steps recited in independent method claim 25. Applicants' independent claims 33, 41, 44, and 48, although different in scope from independent claim 25, recite similar subject matter and are therefore allowable for at least the same reasons.

A. The Cited Art Fails to Disclose or Suggest At Least "Defining a Propagation Model for Estimating the Field Received" as Claimed

The Examiner appears to have mischaracterized the "test propagation signals" in Sessions as signals that are allegedly estimated using a propagation model.¹ Importantly, the word "test" in Sessions does not imply that the disclosed "test propagation signals" are calculated or modeled signals as opposed to physical signals that are actually transmitted over the air. To the contrary, Sessions discloses that the

¹ The final Office Action contains a number of statements characterizing the specification, claims, and related art. Regardless of whether any such statement is identified herein, Applicants decline to automatically subscribe to any statement or characterization in the Office Action.

“test propagation signals” are signals that are transmitted from different elevations of a potential base station site. See, e.g., Sessions, col. 1, ll. 18-22; FIG 1. Although Sessions uses the words “test” and “propagation,” Sessions makes clear that the “test propagation signals” are actual electromagnetic signals that are transmitted to multiple receiving locations, rather than estimated “test” signals allegedly derived from a propagation model. See Sessions, col. 3, ll. 5-17 (“test propagation signals transmitted from each of the antennas to the multiple receiving locations”); col. 3, ll. 58-63 (“a transmitter(s) produces test propagation signals that are selectively broadcast from each of the test antennas”).

The propagation signals disclosed in Sessions are “test” signals because they are used to “test” (or “evaluate”) the field strengths received from the different elevations at a potential base station site. See, e.g., Sessions, col. 1, ll. 18-22 (“this invention . . . is useful for simultaneously evaluating wireless field strengths at multiple elevations and for locating potential base station sites”); col. 3, ll. 25-26 (“the multiple antenna test evaluates multiple elevations of a potential [base station] site”). By simultaneously transmitting signals from multiple elevations at the potential base station site, the testing technique disclosed in Sessions “yields more efficient testing” of the potential base station site and, thus, “cellular designers can conduct more tests in a work day.” Sessions, col. 3, ll. 23-27. Thus, the word “test” in Sessions refers to signals used for testing the base station site and does not indicate that these “test propagation signals” are calculated or modeled signals.

In view of the above, Sessions does not disclose or suggest “defining a propagation model for estimating the field received” as recited in Applicants’

independent claim 25. Indeed, the word “model” does not appear at all in the Sessions disclosure. This is because Sessions does not pertain to or define a propagation model for estimating received signals. The system in Sessions instead transmits physical “test propagation signals” from a potential base station site and then measures their respective received signal strengths at multiple receiver locations. See, e.g., Sessions, col. 2, ll. 42-45.

Forstrom et al. fails to remedy the absence in Sessions of “defining a propagation model for estimating the field received from the at least one source of electromagnetic field at a determined position of a territory,” as claimed. Forstrom et al. discloses a system that determines the position of an emitter (radio transmitter). See, e.g., Forstrom et al., Title. The system in Forstrom et al. discloses a trilateration technique in which “the position of the emitter is determined by detecting a signal from the emitter at three or more receiver communication devices positioned at different locations.” Forstrom et al., Abstract. The position of the emitter is estimated based on the signal detected by the three or more receiver devices. See, e.g., Forstrom et al., ¶ 0036 (“Any signal that can be detected by three or more receiver radios, including the briefest of transmission signals, will provide the basis for determining the position of the emitter using the trilateration based position estimating techniques disclosed herein”).

While Forstrom et al. discloses estimating the position of an emitter, Forstrom et al. does not disclose or suggest estimating the field received from the emitter using a propagation model. For example, Forstrom et al. defines the “emitter” as “any device or other entity that emits an electromagnetic signal that can be detected.” Forstrom et al., ¶ 0035 (emphasis added). Therefore, the emitted signal in

Forstrom et al. is a physical signal that is actually transmitted (emitted) and detected—the emitted signal in Forstrom et al. is not a “modeled” signal using a propagation model. As in Sessions, the word “model” does not appear anywhere in the Forstrom et al. disclosure. This is because, like Sessions, Forstrom et al. discloses physical signals that are physically transmitted to multiple receiver locations, not modeled signals.

Because of the complete absence of at least “defining a propagation model for estimating the field received from the at least one source of electromagnetic field at a determined position of a territory” in both Sessions and Forstrom et al., there is no possible application of these cited references, whether taken individually or in combination, that can anticipate or render obvious Applicants’ independent claim 25. Applicants’ independent claims 33, 41, 44, and 48, although different in scope from independent claim 25, recite similar subject matter and are therefore allowable for at least the same reasons.

B. The Cited Art Fails to Disclose or Suggest At Least “Estimating the Field Received at a Determined Position of a Territory” as Claimed

Sessions discloses “multiple sets of test propagation signals [that are] transmitted from each of the antennas to the multiple receiving locations within the potential [base station] cell.” Sessions, col. 3, ll. 7-10. Sessions further discloses that the receiving locations measure (“evaluate”) the field strengths simultaneously transmitted from antennas positioned at different elevations at a potential base station site. See, e.g., Sessions, col. 3, ll. 55-57 (“simultaneously evaluate field strengths of wireless transmission paths at multiple elevations of potential base station sites”);

FIG. 1. Sessions does not define a propagation model (or modified propagation model) that estimates the field received at a determined position of a territory.

In addition, there would be no reason to estimate the transmitted field in Sessions, since the field strength is already known from direct field measurements at various points in the cellular territory. See, e.g., Sessions, col. 2, ll. 3-8 and 54-56. Moreover, Sessions's description of a field measurement system expressly teaches away from estimating the field strength using mathematical formulae:

As most cellular designers recognize, the most reliable field strength measurements are obtained when signals are broadcast from the actual site itself . . . [t]he field strength could be estimated using mathematical formulae, but these formulae require several correction factors . . . [a]n actual transmission from or near the potential site, called a 'survey,' is therefore necessary to accurately evaluate cellular transmission and reception.

Sessions, col. 1, ll. 60-65.

Forstrom et al. fails to cure Sessions's absence of "estimating the field received at a determined position of a territory" as recited in independent claim 25.

Forstrom et al. discloses a system that estimates the position of an emitter based on the timing of a received signal at three or more receiver devices positioned at different locations. See, e.g., Forstrom et al., Abstract. The receiver devices are time-synchronized so that their received signal measurements can be used to estimate the position of the emitter. See, e.g., Forstrom et al., ¶¶ 0032-0034. Like the receivers in Sessions, the receiver devices in Forstrom et al. do not estimate the field of a received signal. Rather, the receiver devices measure respective detection times of an emitted signal and use these time measurements in a trilateration technique that

determines the emitter position. See, e.g., Forstrom et al., Abstract. The received signal strength of the emitted signal is not estimated in Forstrom et al.

Accordingly, neither Sessions nor Forstrom et al., whether taken individually or in combination, discloses or suggests at least “estimating the field received at a determined position of a territory” as recited in independent claim 25. Applicants’ independent claims 33, 41, 44, and 48, although different in scope from independent claim 25, recite similar subject matter and are therefore allowable for at least the same reasons.

C. The Cited Art Fails to Disclose or Suggest At Least “Modifying the Propagation Model According to Topology Characteristics” and “Using the Modified Propagation Model to Estimate the Field Received” as Claimed

The Examiner acknowledges that “Sessions does not specifically disclose modifying the propagation model according to topology characteristics of the at least one source of electromagnetic field, and using the modified propagation model to estimate the field received from the at least one source of electromagnetic field at the determined position of the territory.” Final Office Action at 3-4. Applicants submit that Forstrom et al. is likewise deficient.

As discussed above, Forstrom et al. fails to disclose or suggest a “propagation model” as recited in each of Applicants’ independent claims. For at least this reason, a fair and accurate reading of Forstrom et al. cannot reasonably disclose or suggest at least “modifying the propagation model according to topology characteristics” or “using the modified propagation model to estimate the field received,” as recited, for example, in independent claim 25.

Furthermore, none of the Examiner's cited passages in Forstrom et al. discloses or suggests modifying a propagation model and using the modified propagation model, as claimed. The Examiner cites to ¶¶ 0026, 0032, 0036, and 0075 in Forstrom et al. as allegedly disclosing the steps of modifying a propagation model and using the modified propagation model as claimed. Applicants respectfully disagree.

The Examiner's cited ¶¶ 0026 and 0075 disclose "a wide variety of applications" in which Forstrom et al.'s disclosed emitter position estimation technique can be useful. These paragraphs of Forstrom et al. do not pertain to "propagation models," let alone modifying propagation models according to topology characteristics or using the modified propagation models to estimate a received field.

The Examiner's cited ¶ 0032 discloses that the emitter position estimating system in Forstrom et al. can operate using receiver radios that are time-synchronized using "cost effective, low accuracy clocks." Again, this cited passage does not concern a "propagation model," as claimed, nor modifying a propagation model according to topology characteristics or using the modified propagation models to estimate a received field.

Finally, the Examiner's cited ¶ 0036 discloses, among other things, that "the characteristics of signals produced by such emitters are highly diverse" and subsequently provides examples of different emitted signal characteristics that can be varied. Because of these signal variations, ¶ 0036 further discloses that "detection of emitted signals can be performed by modularly replaceable units . . . [that] allow a receiver radio to be specifically tailored and/or reprogrammed, as necessary, to meet

specific operational signal detection requirements, and to modularly adapt to changes in signal transmission and/or detection techniques.”

Although Forstrom et al. discloses that a receiver radio may contain modular, reprogrammable units for detecting an emitted signal, Forstrom et al. does not hint or suggest that these disclosed modular, reprogrammable units also comprise a modifiable “propagation model” as claimed. To the contrary, because these disclosed modular units are specifically used for “detection of emitted signals,” Forstrom et al. appears to teach away from further using them for an entirely different purpose as a modifiable “propagation model.” Forstrom et al. is silent regarding any modifiable propagation models within the disclosed modular, reprogrammable units, which are expressly disclosed for the purpose of “detection of emitted signals” rather than modeling.

Based on the foregoing, neither Sessions nor Forstrom et al., whether taken individually or in combination, discloses or suggests at least “modifying the propagation model according to topology characteristics of the at least one source of electromagnetic field” or “using the modified propagation model to estimate the field received from the at least one source of electromagnetic field at the determined position of the territory” as recited in independent claim 25.

Applicants’ independent claims 33, 41, 44, and 48, although different in scope from independent claim 25, recite similar subject matter and are therefore allowable for at least the same reasons. Dependent claims 26-30, 32, 34-38, 40, 42, and 45-47 depend on independent claims 25, 33 and 41 and are therefore also allowable for at least the same reasons.

D. The Cited Art Fails to Disclose or Suggest Every Element Recited in
Dependent Claims 31 and 39

The Examiner rejected dependent claims 31 and 39 for being unpatentable under 35 U.S.C. § 103(a) over Sessions in view of Forstrom et al. and further in view of Alden et al. Notwithstanding any teachings of Sessions, Forstrom et al., or Alden et al. relative to the subject matter of claims 31 and 39, dependent claims 31 and 39 respectively depend on independent claims 25 and 33 and are therefore allowable for at least the same reasons.

Conclusion

The preceding remarks are based only on the arguments in the Office Action, and therefore do not address patentable aspects of the invention that were not addressed by the Examiner in the Office Action. The claims may include other elements that are not shown, taught, or suggested by the cited art. Accordingly, the preceding remarks in favor of patentability are advanced without prejudice to other possible bases of patentability.

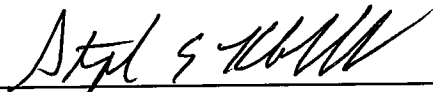
Applicants respectfully request that this response under 37 C.F.R. § 1.116 be entered by the Examiner, placing claims 25-42 and 44-48 in condition for allowance. Applicants respectfully point out that the final action by the Examiner presented some new arguments as to the application of the art against Applicant's invention. It is respectfully submitted that the entering of this response would allow Applicants to reply to the final rejections and place the application in condition for allowance. Finally, Applicants submit that the entry of the amendment would place the application in better form for appeal, should the Examiner dispute the patentability of the pending claims.

In view of the foregoing amendments and remarks, Applicants respectfully request reconsideration and reexamination of this application and the timely allowance of the pending claims, as presently amended. Please grant any extensions of time required to enter this response and charge any additional required fees to Deposit Account No. 06-0916.

Respectfully submitted,

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